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BAYARD, DJENANE M

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *6/18/07*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *6-9,11-17,19,20 and 23-54* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *5-9,11-17,19,20 and 23-54* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some *   c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

1.   This is in response to Request for Continued Examination received 6/18/07 in which

claims 6-9, 11-17, 19-20, 23-54 are pending.

Response to Arguments

2.   Applicant's arguments have been considered but are moot in view of the new ground(s)

of rejection.

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4.   Claims 6-8,12-17, 19, 27, 42-43, 49-54 are rejected under 35 U.S.C. 102(e) as being

anticipated by U.S. Patent Application No. 2003/0065782 to Nishanov et al.

a.   As per claims 6 and 27, Nishanov et al teaches a method of claiming ownership of a

plurality of disks by a network device in a network storage system comprising: writing

ownership information to a predetermined area of each disk (See page4, paragraph [0036-0037],

the storage device has maintained a key table, a reservation table); setting a small computer

system interface (SCSI) reservation tag for each disk to a state of network device ownership to

provide a two part indicia of ownership for each disk (See page 4, paragraph [0037-0038], where

the two part indicia of ownership for each disk, where the two part indicia of ownership are both

written to each disk (See page 4, paragraph [0037, *each node that wants access to the disk has*

an identifier and registers a reservation key with the disk which is stored in the key table based

on the identifier) identifying all disks owned by the network device using ownership information

written to the predetermined area of each disk of the plurality disks and, for each identified disk,

if a mismatch occurs between the ownership information on the predetermined area of the disk

and the ownership defined by the SCSI reservation tag, then using the ownership information

written to the predetermined area of the disk as definite ownership data (See page 5, paragraph

[0048] and page 6, paragraph [0054]).

b.   As per claim 9 and 17, Nishanov et al teaches a system comprising a plurality of network

devise; one or more switches, each network device connected to at least one of the one or more

switch; a plurality of disks having a first ownership attribute in the form of a small computer

system interface (SCSI) reservation tag (See page 4, paragraph [0037]), wherein the first and

second ownership attribute are written to each disk, each connected to at least one of the plurality

of switches each network device of the plurality of network devices identifies all disks owned by

that network device using ownership information written to the predetermined area of each disk

of the plurality disks (See page 4, paragraph [0036-0038]) and, for each identified disk, if a .

mismatch occurs between the ownership information on the predetermined area of the disk and

the ownership defined by the SCSI reservation tag, then using the ownership information written

to the predetermined area of the disk as definite ownership data (Seepage 5, paragraph [0048]

and page 6, paragraph [0054]).

c.   As per claims 7 and 13, Nishanov et al teaches the claimed invention as described above.

Furthermore, Nishanov et al teaches wherein the ownership information further comprises a

serial number of the network device (page 4, paragraph [0037]).

d.   As per claims 8, 16 and 19, Nishanov et al teaches the claimed invention as described

above. Furthermore, Nishanov et al wherein the network device comprises a file server (See

page 4, paragraph [0036]).

e.   As per claims 12, Nishanov et al teaches the claimed invention as described above.

Furthermore, Nishanov et al teaches wherein the small computer system interface level

reservation tag is set such that only the network device may write to the disk (See page 1,

paragraph [0007]).

f.   As per claim 14, Nishanov et al teaches the claimed invention as described above.

Furthermore, Nishanov et al teaches failed to teach wherein each of the plurality of file servers

can read data from each of the plurality of disks (See page 1, paragraph [0007]).

g.   As per claim 15, Nishanov et al teaches the claimed invention as described above.

Furthermore, Nishanov et al teaches wherein only a network device that owns one of the

plurality of disks can write data to the one disk (See page 4, paragraph [0036-0040]).

h.   As per claim 42, Nishanov et al teaches the claimed invention as described above.
Furthermore, Nishanov et al teaches wherein the small computer system interface reservation tag
and the ownership information at the predetermined area of the disk indicate ownership by the
same network device (See page 4, paragraph [0037-0038]).

i.   As per claim 43, Nishanov et al teaches the claimed invention as described above.
Furthermore, Nishanov et al teaches wherein the small computer system interface (SCSI)
reservation tag is a small computer system interface level 3 (SCSI-3) reservation tag (See page 4,
paragraph [0035]).

j.   As per claims 44, 49-50, Nishanov et al teaches a computer readable medium containing
executable program instructions for manage ownership of one or more storage devices, the
executable program instructions comprising program instructions for: reading ownership
information from a predetermined area of each storage device (See page 4, paragraph [0039] and
page 5, paragraph [0043]); accessing a small computer system interface (SCSI) reservation tag
associate with each storage device (See page 4, paragraph [0037]).; comparing the SCSI
reservation tag to the ownership information of the same storage device and, if there is not a
match, changing the SCSI reservation tag to match the ownership information; and configuring
the one or more storage devices for use by the network device (See page 5, paragraph [0048] and
page 6, paragraph [0054]).

k.   As per claim 51, Nishanov et al teaches a plurality of disks having a first ownership

attribute written to a known and constant location across all the disks and second ownership

attribute in the form of a small computer system interface (SCSI) reservation tag to provide a two

part indicia of ownership (See page 4, paragraph [0036-0037]); and a network device with an

ownership layer for comparing the SCSI persistent reservation tag to the ownership information

stored in the known and constant location of the same storage device and , if there is not a match,

changing the SCSI persistent reservation tag to match ownership information stored in the

known and constant location (See page 5, paragraph [0048] and page 6, paragraph [0054]).

l.   As per claim 52, Nishanov et al teaches a method for a network device to manage

ownership of one or more storage devices in a network storage system, comprising:

reading ownership information of each storage device from a known and constant location across

all storage devices (See page 4, paragraph [0039] and page 5, paragraph [0043]); accessing a

small computer system interface (SCSI) reservation tag associate with each storage device (See

page 4, paragraph [0037-0038]); and comparing the SCSI reservation tag to the ownership

information of the same storage device and, if there is not a match, changing the SCSI persistent

reservation tag to match the ownership information stored on the storage device in the known

and constant location (See page 5, paragraph [0048] and page 6, paragraph [0054]).

m.   As per claim 53, Nishanov et al teaches the claimed invention as described above.

Furthermore, Nishanov et al teaches a method, comprising writing ownership information to a

predetermined area of the disk to claim write ownership by a first server (See page 4, paragraph

[0036-0037]); setting a small computer system interface (SCSI) reservation tag to a state of the

first server ownership to provide a two part indicia of ownership for the first server (See page 4,

paragraph [0037-0038]).); and determining, by a second server, the disk is owned by the first

server by reading the ownership information in the predetermined area of the disk (See page 5,

paragraph [0048] and page 6 paragraph [0054]).

n.   As per claim 54, Nishanov et al teaches a method of claiming ownership of a plurality of

disks by a network device in a network storage system, comprising: writing ownership

information to a predetermined area of each disk (See page 4, paragraph [0036]); setting a

reservation tag for each disk to a state of network device ownership to provide a two part indicia

of ownership for each disk, where the two part indicia of ownership are both written to each disk

(See page 4, paragraph [0036-0038]); identifying all disks owned by the network device using

ownership information written to the predetermined area of each disk of the plurality disks and,

for each identified disk, if a mismatch occurs between the ownership information on the

predetermined area of the disk and the ownership defined by the reservation tag, then using the

ownership information written to the predetermined area of the disk as definite ownership data

(See page 5, paragraph [0048 and page 6, paragraph [0054]).

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

6.   This application currently names joint inventors. In considering patentability of the

claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

claims was commonly owned at the time any inventions covered therein were made absent any

evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out

the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c)

and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7.   Claims 20, 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S.

Patent Application No. 2003/0065782 to Nishanov et al in view of U.S. Patent Application No.

2003/0093501 to Carlson et al.

a.   As per claim 20, Nishanov et al teaches a plurality of disks having a first ownership

attribute written to a predetermined area of the disk (See page 4, paragraph [0036-0037]) and a

second ownership attribute in the form of a small computer system interface reservation tag (See

page 4, paragraph [0037-0038]). Furthermore, Nishanov et al teaches wherein each network de

ten to the predetermined area of each disk of the plurality disks and, for each identified disk, if a

mismatch occurs between the ownership, information on the predetermined area of the disk and the ownership defined by the SCSI reservation tag, then using the owner information written to the predetermined area of the disk as definite ownership data (See page 5, paragraph [0048] and page 6, paragraph [0054]). However, Nishanov et al fails to teach wherein one or more switches interconnected to form a switching fabric; a plurality of disks, each of the disks connected to at least one of the switches; and one or more network devices, interconnected with the switching fabric, each of the network devices being adapted to own a predetermined set of disks of the plurality of disk.

Carlson et al teaches a network storage system comprising: one or more switches interconnected to form a switching fabric; a plurality of disks, each of the disks connected to at least one of the switches (See page 2, paragraph [0039]); and one or more network devices, interconnected with the switching fabric, each of the network devices being adapted to own a predetermined set of disks of the plurality of disks (See page 8, paragraph [0082

It would have been obvious to one with ordinary skill in the art at the time the invention was made to incorporate the teaching of Carlson in the claimed invention of Brunelle et al in order to interconnect the attached host devices (see page 2, paragraph [0039]).

b.   As per claim 23, Nishanov et al teaches wherein the first ownership attribute further comprises a serial number of one of the one or more network devices (See page 4, paragraph [0037]).

c.   As per claims 24, Nishanov et al teaches wherein the small computer system interface reservation tag is a small computer system interface level 3 persistent reservation tag (See page 4, paragraph [0035].

d.   As per claim 25, Nishanov et al teaches wherein each of the network devices further comprises a disk ownership table, the disk ownership table containing ownership data for each of the disks (See page 4, paragraph [0036-0037]).

8.   Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent Application No. 2003/0065782 to Nishanov et al in view of U.S. Patent Application No. 2003/0093501 to Carlson et al as applied to claim 20 above, and further in view of U.S. Patent Application No. 2003/0061491 to Jaskiewicz et al.

a.   As per claim 26, Nishanov et al in view of Carlson et al failed to teach wherein the ownership table further comprises a world wide name for each of the disks, the world wide name being used for identification of each of the disks.

Jaskiewicz et al teaches wherein the ownership table further comprises a world wide name for each of the disks, the world wide name being used for identification of each of the disks (See page 3, paragraph [0021]).

It would have been obvious to one with ordinary skill in the art at the invention was made to incorporate wherein the ownership table further comprises a world wide name for each of the

disks, the world wide name being used for identification of each of the disks as taught by

Jaskiewicz et al in the claimed invention of Nishanov et al in view of Carlson et al in order to

give the host device permission to write and read data to and from the storage location the right

device id (See page 3, paragraph [0022]).

9.   Claims 28-42, 45-48 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S.

Patent Application No. 6,654902 to Brunelle et al in view of U.S. Patent Application No.

2003/0065782 to Nishanov et al

a.   As per claims 28, 34-36, Brunelle et al teaches network storage system one or more

storage devices, each storage device having a predetermined area for storing ownership

information and each storage device having a small computer system interface (SCSI)

reservation tag (See col. 5, lines 25-67); at least one network device having an ownership table

constructed based upon the ownership information from each storage device (See col. 7, lines 7-

17, *a reserve table stored in the storage device. The persistent reserve table includes a*

reservation entry for each reservation. The reservation entry includes an initiator identifier and

a reservation descriptor); the at least one network device having a disk storage layer for

configuring the one or more storage devices identified in the ownership table into at least one

volume for use by the network device (See col. 8, lines 46-55, *the registered cluster nodes are*

permitted to write data to the shared storage device because the type of reservation enabled is

write exclusive registrants only). However, Brunelle et al fails to teach the at least one network

device having an ownership layer for comparing the SCSI reservation tag to the ownership

information of the same storage device and, if there is not a match, changing the SCSI

reservation tag to match the ownership information.

Nishanov et al teaches at least one network device having an ownership layer for

comparing the SCSI level 3 reservation tag to the ownership information of the same storage

device and, if there is not a match, changing the SCSI level 3 reservation tag to match the

ownership information (See page 5, paragraph [0048] and page 6, paragraph [0054]).

It would have been obvious to one with ordinary skill in the art at the time the invention

was made to incorporate the teaching of Nishanov et al in the claimed invention of Brunelle et al

in order to allow a resource such as storage device to be protected by exclusive access through a

persistent reservation that is not removed (See page 1, paragraph [0007]).

c.   As per claims 29, 37, 42 and 47, Brunelle et al teaches setting ownership information at

the predetermined area of each storage device (See col. 7, lines 1-17).

d.   As per claims 30 and 38, Brunelle et wherein the step of configuring further comprises:

organizing the one or more storage devices into at least one Redundant Array of independent

Disks (RAID) group (See col. 3, lines 30-35).

e.   As per claims 31, 39 and 48, Brunelle et al teaches wherein the predetermined area of the

one or more storage devices is sector zero of the one or more storage devices (See col. 5 lines 55-

64).

f.   As per claims 32 and 40, Brunelle et al teaches wherein the ownership information is a

serial number of the network device that owns that particular storage device (See col. 7, lines 1-

17).

g.   As per claims 33 and 41, Brunelle et al teaches wherein the ownership table includes a

world wide name for each of the storage devices, the world wide name being used to identify

each of the storage devices (See col. 7, lines 1-17).

h.   As per claim 45, Brunelle et al teaches wherein the small computer system interface

(SCSI) reservation tag is a small computer system interface level 3 (SCSI-3) reservation tag (See

col. 5, lines 25-67).

i.   As per claim 46, Brunelle et al in teaches in response to reading the ownership

information, creating an ownership table on the network device that identifies the one or more

storage devices owned by the network device; and using the ownership table to configure the one

or more storage devices into at least one volume (See col. 8, lines 46-55, *the registered cluster*

nodes are permitted to write data to the shared storage device because the type of reservation

enabled is write exclusive registrants only).

Conclusion

10.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

U.S. Patent No. 6,804703 to Allen et al teaches a system and method for establishing persistent reserves to nonvolatile storage in a clustered computer environment.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Djenane M. Bayard whose telephone number is (571) 272-3878. The examiner can normally be reached on Monday- Friday 5:30 AM- 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia can be reached on (571) 272-3880. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Djenane Bayard

Patent Examiner

JASON CARDONE
SUPERVISORY PATENT EXAMINER